University of Toronto
Orthopaedic Sports Medicine

CHONDRAL DEFECTS – HOW MUCH OA CAN YOU ACCEPT?

2015 Chicago Sports Medicine Symposium

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CONFLICTS OF INTEREST

I have no conflicts to report.

Objectives

- To understand how to utilize preoperative image findings to optimize peri-operative decision making regarding patient selection and prognosis determination

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Chondral Defects
Common Comorbidities

- **Etiology of chondral defects**
  - Trauma
  - FAI
  - Labral tears
  - Osteonecrosis
  - SCFE, dysplasia
- **In patients with FAI, > 70% patients have at least grade I chondropathy (Kemp, 2014)**
- **Chondral defects must be addressed with comorbidities including labral pathology, impingement, etc**

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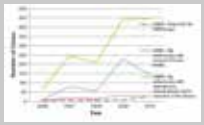
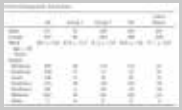
Hip Arthroscopy Utilization in the USA

Trends in Hip Arthroscopy Utilization in the United States

Kevin J. Bozic, MD, MBA[a,b], Vanessa Chan, MPH[a,b], Frank H. Valone III, MD[a], Brian T. Feeley, MD[a], Thomas P. Vail, MD[a]

- **600% increase in the incidence of hip arthroscopy cases in ABOS II candidates from 2006 to 2010**
- **Largest increase in patients with FAI/OA**





J Arthroplasty 2013

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Pre-operative Imaging

- **Standing x-rays to quantify joint space**
- **Joint Space Narrowing**
  - > or < 2mm joint space
- **Tonnis Classification**
  - Grade 0: no signs of OA
  - Grade 1: increased sclerosis, slight narrowing, no/slight loss of head sphericity
  - Grade 2:small cysts, moderate narrowing of joint space, moderate loss of head sphericity
  - Grade 3: large cysts, severe narrowing of joint space, severe deformity of the head

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Microfracture in the Hip

Results of a Matched-Cohort Controlled Study With 2-Year Follow-up

- LOE III, case-control study
- N=79; mean age 44
- FAI surgery in Tonnis 0 and 1 hips
- No difference in PRO's in patients with and without microfracture at 2 years

AJSM 2015

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Operative treatment of chondral defects in the hip joint: a systematic review

Mark A. Jordan · Geoffrey S. Van Thiel · Jaskarndip Chahal · Shane J. Nho

- Fontana et al, 2014
- Retrospective case-control study
- N=30, f/u at 6 years
- ACI vs debridement Tonnis 2 hips
- Mean age 41-43
- In general, inferior outcomes with debridement
- Debridement: inferior outcomes for chondral lesions >3cm^2
- ACT: inferior outcomes for superior femoral head lesions and for anterosuperior acetabular lesions with joint space narrowing.

Arthroscopy 2012

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Operative treatment of chondral defects in the hip joint: a systematic review

Mark A. Jordan · Geoffrey S. Van Thiel · Jaskarndip Chahal · Shane J. Nho

- Horisberger et al., 2010
- Retrospective case series for microfracture
- N=20 patients; age 47; f/u 3 years
- 50% conversion to THA
- Suggested that patients should not undergo hip arthroscopy if Tonnis 3 changes, as well as, if grade IV chondral changes on femoral head

Arthroscopy 2012

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RESEARCH ARTICLE

Outcome of Arthroscopy in Patients with Advanced Osteoarthritis of the Hip

Sachin Delvajna*, Ali Bajwa, Richard Villar

- N=77 patients with Tonnis 2 or 3 OA
- Follow-up 2.8 years
- Treatment: IAS + HA
- Mean age 43
- Mean preop mHSS 58 NAHS 64
- Postop mHSS 72 NAHS 77 at 2 years
- 44% of patients required an arthroplasty at a mean of 18 months

PLOS One 2015

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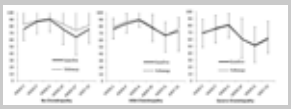
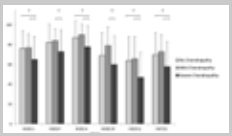
Hip chondropathy at arthroscopy: prevalence and relationship to labral pathology, femoroacetabular impingement and patient-reported outcomes

Joanne L Kemp,[1] Michael Makdissi,[1] Anthony G Schache,[1] Michael G Pritchard,[1] Thomas C B Pollard,[2] Kay M Crossley[1]

- 100 patients
- Mean age 36
- Prevalence of chondroapthy 72%
- Little improvement after 18 months regardless of cartilage status





BJSM 2014

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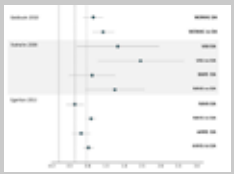
Hip Arthroscopy in the Setting of Hip Osteoarthritis: Systematic Review of Outcomes and Progression to Hip Arthroplasty

Joanne L. Kemp PT, PhD, David MacDonald PT, PhD, Natalie J. Collins PT, PhD, Anna L. Hatton PT, PhD, Kay M. Crossley PT, PhD

- 22 studies included
- Larger with-in group SMD's for those without hip
- Progression to THA
  - Risk was 20 x greater with grade III/IV acetabular chondral disease
  - Risk of THA 39 x greater if < 2mm joint space preop



CORR 2015

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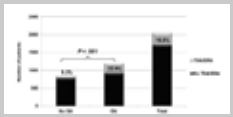
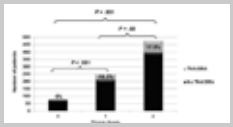
How Much Arthritis Is Too Much for Hip Arthroscopy: A Systematic Review

- 15 articles included
- LOE IV
- N=2051 hips, mean age 40.2 years
- Patients with Tonnis grade I or greater and/or joint space of 2mm or less had less benefit with hip arthroscopy





Arthroscopy 2015

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How Much Arthritis Is Too Much for Hip Arthroscopy: A Systematic Review

Arthroscopy 2015

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PASS: "I Feel Good"

The Patient Acceptable Symptomatic State for the Modified Harris Hip Score and Hip Outcome Score Among Patients Undergoing Surgical Treatment for Femoroacetabular Impingement

AJSM 2015

- N=130 patients
- LOE 2
- mHHS 74
- HOS ADL 87
- HOS Sports 75

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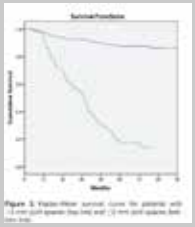
The Effect of Joint Space on Midterm Outcomes After Arthroscopic Hip Surgery for Femoroacetabular Impingement

Jack G. Skendzel,* MD, Marc J. Philippon,*† MD, Karen K. Briggs,* MPH, and Peter Golan,* MD

- N=559 patients
- Mean survival time for patients with limited joint space (<2mm) 40 vs. 88 months
- 86% conversion fo THA if jt space < 2mm
- HOS ADL 62 HOS Sports 47 mHHS 71
  - All < PASS in OA group



AJSM 2014

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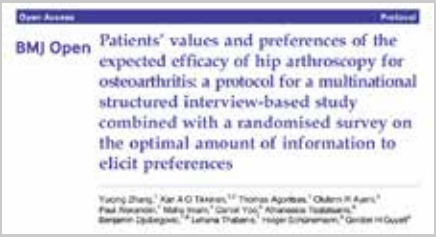
Measuring Patient Values and Expectations

How much time is enough?



BMJ Open

Patients' values and preferences of the expected efficacy of hip arthroscopy for osteoarthritis: a protocol for a multinational structured interview-based study combined with a randomised survey on the optimal amount of information to elicit preferences

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Summary

- In the context of FAI surgery, inferior results are observed for hips with Tonnis 2 changes and/or joint space < 2mm
- Further research is required to elucidate the prognostic factors in those with Tonnis 1 changes
- Even in the absence of joint space narrowing, there appears to be inferior outcomes at large in patients with outerbridge III/IV chages
- Femoral head lesions may portend a poorer prognosis

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Thank You

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